CLAIMS

1. A dynamics processor comprising:

a non-linear automatic gain control (AGC) responsive to an input audio signal comprised of a plurality of frequency components, each frequency component having associated therewith an amplitude, said non-linear AGC adaptive to develop a modified gain audio signal;

a multiband cross-over device responsive to the modified gain audio signal and adaptive to generate 'n' number of signals, each of said 'n' signals having an amplitude and further having a unique frequency band associated therewith;

'n' number of processing blocks, each of which responsive to a respective one of said 'n' signals for modifying the amplitude of the 'n' signals to develop modified 'n' signals; and

a mixer device responsive to said modified 'n' signals and adaptive to combine the same, wherein the amplitude of the plurality of frequencies associated with the audio signal is modified in real-time thereby enhancing the audibility of the audio signal.

2. A dynamics processor as recited in claim 1 wherein said mixer device is adaptive to provide an output for transmission thereof over the Internet.

3. A dynamics processor as recited in claim 1 wherein said non-linear AGC for multiplying said input audio signal by gain factors varying in a non-linear manner.

4. A dynamics processor as recited in claim 1 comprising a cross-over block responsive to said input audio signal and adaptive to divide the input audio signal into cross-over signals having two or more frequency bands, said dynamics processor including additional non-linear

AGCs, each of which responsive to a respective cross-over signal, said non-linear AGCs and non-linear AGC developing at least two pre-input mixer signals.

5. A dynamics processor as recited in claim 4 comprising an input mixer device responsive to said at least two pre-input mixer signals for combining the same to develop said modified gain audio signal.

6. A dynamics processor as recited in claim 1 wherein each of said 'n' number of processing blocks includes a processing block AGC (48 in Fig. 2) coupled to a negative attack time limiter, and a level mixer coupled to the negative attack time limiter, the processing block AGC responsive to said respective one of said 'n' signals.

7. A dynamics processor as recited in claim 6 wherein each of said 'n' number of processing blocks further includes a first drive circuit responsive to said respective one of said 'n' signals and coupled to said processing block AGC, a second drive circuit coupled between said processing AGC and said negative attack time limiter and an inverse drive circuit coupled between said negative attach time limiter and said level mixer, said first and second drive circuit for adjusting the amplitude of said respective one of said 'n' signals by a gain factor determined by a user.

8. A dynamics processor as recited in claim 7 wherein said level mixer for programmably adjusting the amplitude of said respective one of said 'n' signals by a gain factor.

9. A dynamics processor as recited in claim 7 wherein said inverse drive circuit for adjusting said respective one of said 'n' signals by one divided by the gain factor.

10. A dynamics processor as recited in claim 6 wherein one of said 'n' number of processing blocks includes a soft clip device coupled between said negative attack time limiter and said level mixer and responsive to said respective one of said 'n' signals, said soft clip device for truncating the amplitude of said respective one of said 'n' signals when the amplitude is above a predetermined level thereby developing a signal having overshoots, said overshoots having amplitudes, the soft clip device further for decreasing the amplitude of the overshoots thereby enhancing the audibility of the signal.

11. A method of dynamically processing an audio signal comprising:

receiving an input audio signal comprised of a plurality of frequency components, each frequency component having associated therewith an amplitude;

modifying the input audio signal;

generating 'n' number of signals from said modified input audio signal, each of said 'n' signals having an amplitude and further having a unique frequency band associated therewith;

modifying the amplitude of the 'n' signals; and

combining said modified 'n' signals,

wherein the amplitude of the plurality of frequencies associated with the audio signal is modified in real-time thereby enhancing the audibility of the audio signal.

12. A method of dynamically processing an audio signal as recited in claim 10 wherein said steps in claim 10 are performed in assembly code thereby improving the efficiency of said processing.

13. A computer readable medium having stored therein computer readable program code comprising instructions for performing the following steps:

receiving an input audio signal comprised of a plurality of frequency components, each frequency component having associated therewith an amplitude;

modifying the input audio signal;

generating 'n' number of signals from said modified input audio signal, each of said 'n' signals having an amplitude and further having a unique frequency band associated therewith;

modifying the amplitude of the 'n' signals; and

combining said modified 'n' signals,

wherein the amplitude of the plurality of frequencies associated with the audio signal is modified in real-time thereby enhancing the audibility of the audio signal.

14. A dynamics processor comprising:

non-linear automatic gain control (AGC) means responsive to an input audio signal comprised of a plurality of frequency components, each frequency component having associated therewith an amplitude, said non-linear AGC adaptive to develop a modified gain audio signal;

multiband cross-over means responsive to the modified gain audio signal and adaptive to generate 'n' number of signals, each of said 'n' signals having an amplitude and further having a unique frequency band associated therewith;

'n' number of processing blocks, each of which responsive to a respective one of said 'n' signals for modifying the amplitude of the 'n' signals; and

mixer means responsive to said modified 'n' signals and adaptive to combine the same,

wherein the amplitude of the plurality of frequencies associated with the audio signal is modified in real-time thereby enhancing the audibility of the audio signal.

15. A dynamics processor as recited in claim 14 wherein said non-linear AGC means for multiplying said input audio signal by gain factors varying in a non-linear manner.

16. A dynamics processor as recited in claim 14 comprising a cross-over block responsive to said input audio signal and adaptive to divide the input audio signal into cross-over signals having two or more frequency bands, said dynamics processor including additional non-linear AGC means, each of which responsive to a respective cross-over signal, said non-linear AGC means and non-linear AGC means for developing at least two pre-input mixer signals.

17. A dynamics processor as recited in claim 16 comprising an input mixer means responsive to said at least two pre-input mixer signals for combining the same to develop said modified gain audio signal.

18. A dynamics processor as recited in claim 14 wherein each of said 'n' number of processing means includes a processing block AGC coupled to a negative attack time limiter, said each of said 'n' number of processing blocks further including a level mixer coupled to the negative attack time limiter, the processing block AGC responsive to said respective one of said 'n' signals.

19. A dynamics processor as recited in claim 18 wherein each of said 'n' number of processing blocks further includes a first driver responsive to said respective one of said 'n' signals and coupled to said processing block AGC, a second driver coupled between said

processing AGC and said negative attack time limiter and an inverse driver coupled between said negative attach time limiter and said level mixer.